

CLAIMS

1. A surface treated steel sheet for battery cases having a carbon black-dispersed nickel plating layer having carbon black dispersed therein and formed on at least its surface supposed to form the inner surface of a battery case.
2. A surface treated steel sheet for battery cases having a carbon black-dispersed nickel alloy plating layer having carbon black dispersed therein and formed on at least its surface supposed to form the inner surface of a battery case.
3. The surface treated steel sheet for battery cases according to claim 1 or 2, wherein the plating or alloy plating layer contains graphite dispersed therein.
4. The surface treated steel sheet for battery cases according to claim 2 or 3, wherein the alloy plating layer is of any of a nickel-cobalt alloy, a nickel-cobalt-iron alloy, a nickel-manganese alloy, a nickel-phosphorus alloy and a nickel-bismuth alloy.
5. The surface treated steel sheet for battery cases according to any of claims 1 to 4, wherein a diffusion layer is formed under the plating or alloy plating layer.
6. The surface treated steel sheet for battery cases according to any of claims 1 to 5, wherein a non-lustrous nickel layer, a semi-lustrous nickel layer, a lustrous nickel layer, a nickel-cobalt alloy layer, a nickel-cobalt-iron alloy layer, a nickel-manganese alloy layer, a nickel-phosphorus alloy

layer or a nickel-bismuth alloy layer is formed under the plating or alloy plating layer.

7. The surface treated steel sheet for battery cases according to any of claims 1 to 6, wherein the plating or alloy plating layer has a carbon black content of 0.1 to 25% by weight.

8. A method of manufacturing a surface treated steel sheet for battery cases, characterized in that a steel sheet is plated with a plating solution containing a nickel salt, a surface active agent and carbon black powder on at least its surface supposed to form the inner surface of a battery case.

9. A method of manufacturing a surface treated steel sheet for battery cases, characterized in that a steel sheet is plated with a plating solution containing one or more of a cobalt salt, an iron salt, a manganese salt, a phosphorus compound and a bismuth salt and further containing a nickel salt, a surface active agent and carbon black powder on at least its surface supposed to form the inner surface of a battery case.

10. A battery case formed by using the surface treated steel sheet according to any of claims 1 to 7.

11. A battery including the battery case according to claim 10.